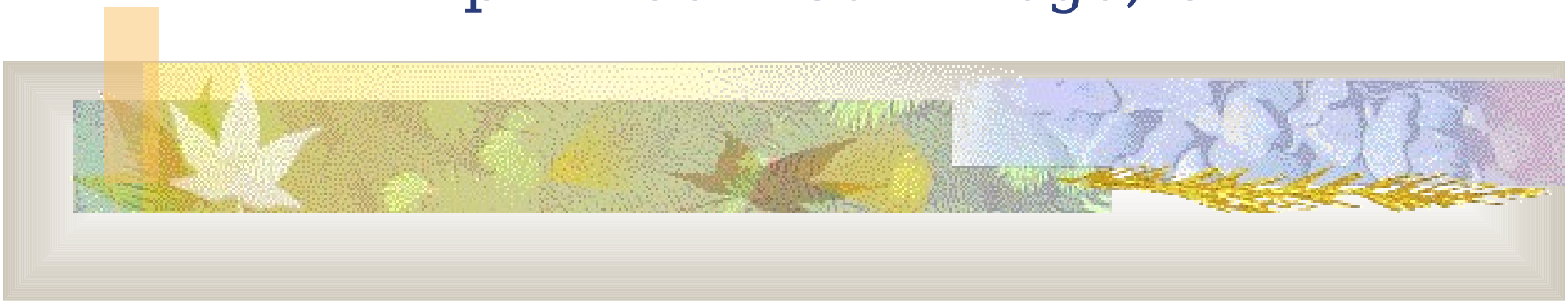
Environment, Safety and Occupational Health (ESOH) Performance Measures

NDIA Environmental Meeting
April 2004 San Diego, CA



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Presentation Purpose

Provide attendees:

- Methods for developing ESOH performance measures
- Examples of ESOH performance measures
  - Safety and Occupational Health Action Plan
  - Environmental Risk Index

Outline

- Basic Concepts
  - Why measure?
  - Methods for building metrics
  - Testing and using metrics
- Applying the Concepts
  - Safety and Health Action Plan
  - Environmental Risk Index

Why Measure

- Monitoring existing program
  - how well are we doing?
- Measure effect of change
  - initiatives
  - shift in funding & emphasis
  - organizational changes
  - change processes or procedures

To Make Decisions about Change

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Developing Metrics

3 Common Methods

- Brainstorming
- Process based
- Decision Based

Brainstorming

Safety and Occupational Health Metrics

- # of medical exams
- # of hazard abatement projects
- $ spent on hazard abatement
- # of worker complaints
- # of safe behaviors
- % supervisors and employees trained
- # of individuals enrolled in medical surveillance programs
- # employees wearing respirators

Brainstorming

Environmental Metrics

completed site assessments

sites remediated

% reduction in emissions

% of compliance inspections completed

$ spent on fines and penalties

Brainstorming

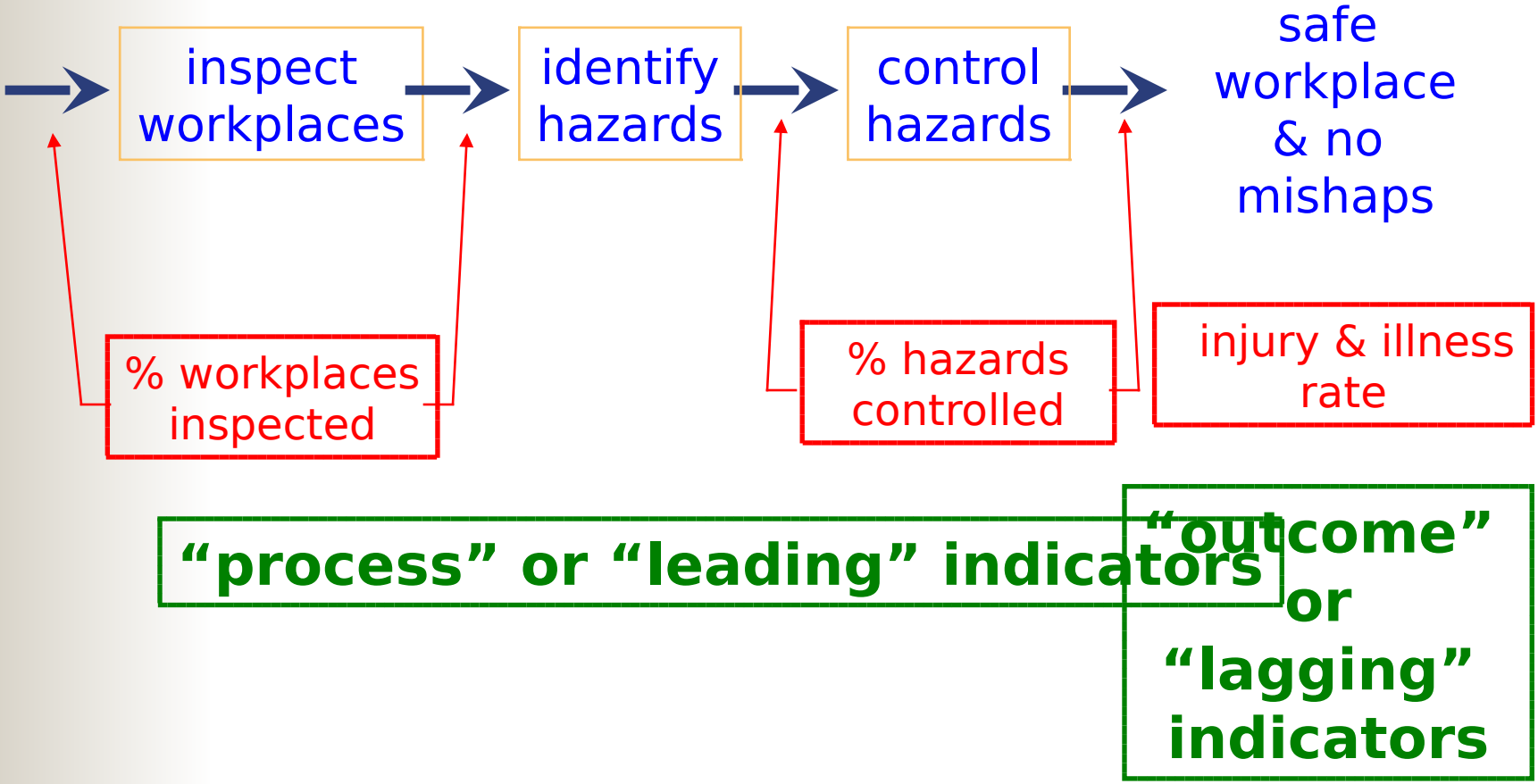
- Gets everyone involved
- Lots of metrics rapidly
- How to narrow the list of metrics?

Developing Metrics
3 Common Methods

- Brainstorming
- Process based
- Decision Based

Process Based

Example – Inspection Process



Developing Metrics
3 Common Methods

- Brainstorming
- Process based
- Decision Based

Decision Based

- Mission
  - Finance office – to spend all $$ this FY
- What decisions are you trying to make
  - How can I reach “zero” on Sep 30th
- Information needed for decisions
  - How much am I over / under / on-track
- Data supporting the information
  - outstanding bills
  - sub-accounts

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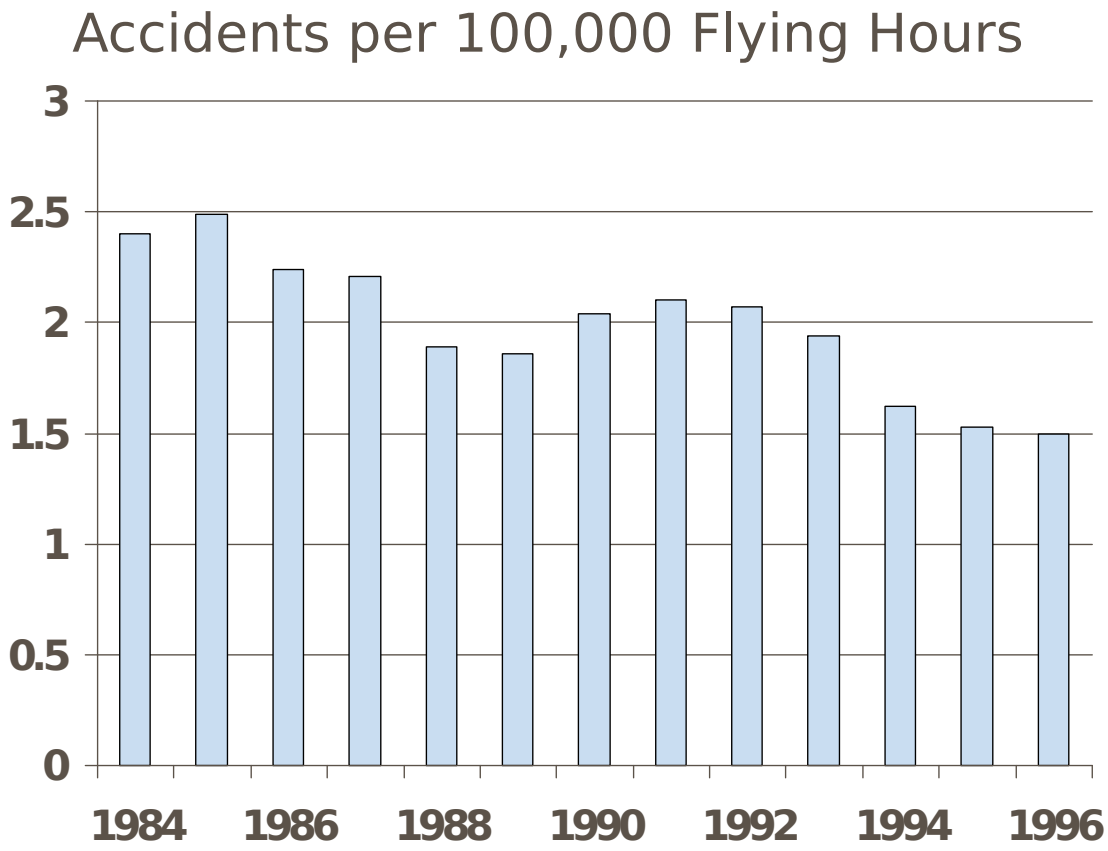
Testing Metrics

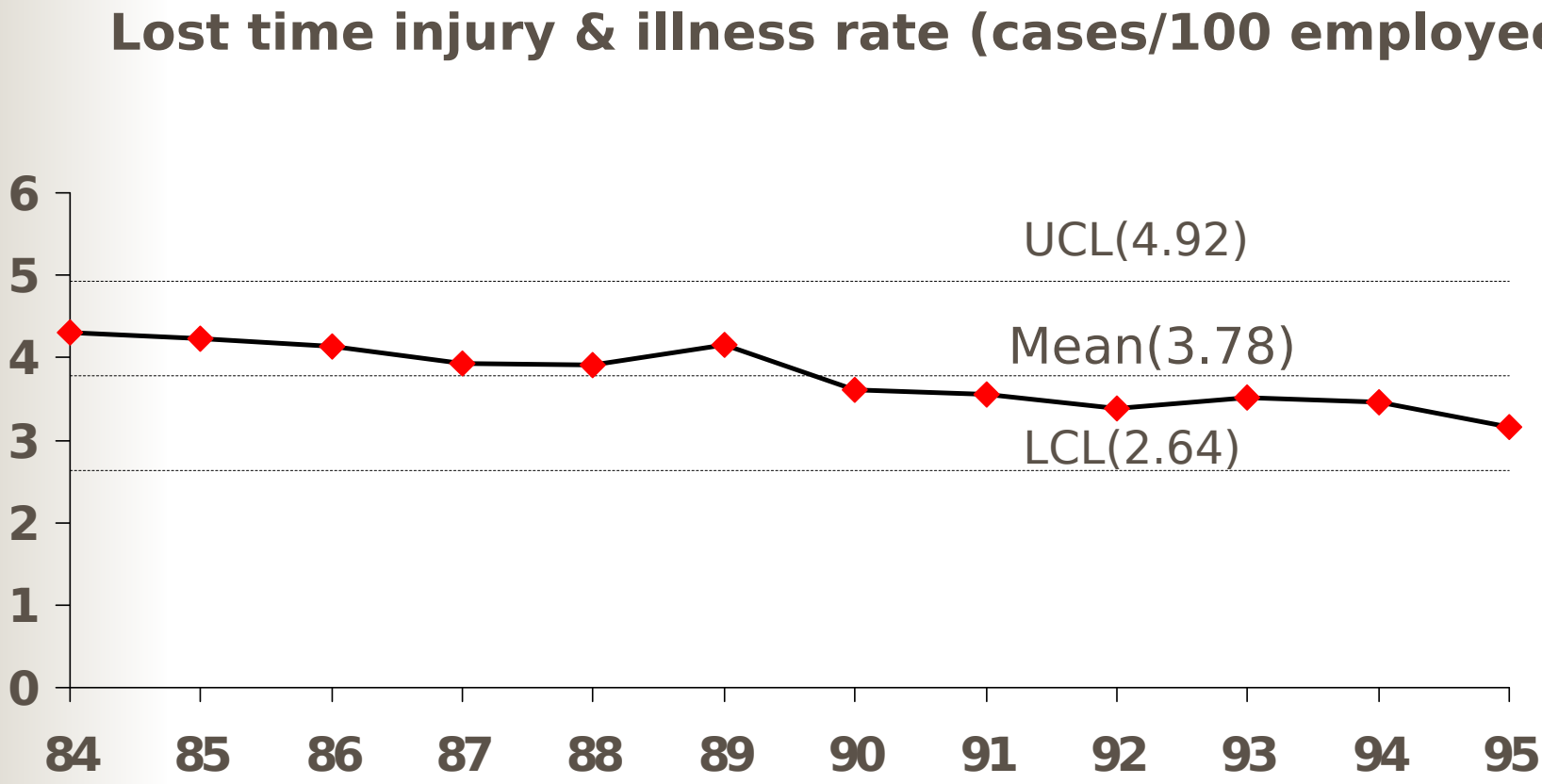
- Meaningful to the customer
- Simple, understandable, repeatable
- Shows a trend
- Clearly defined
- Data that’s economical to collect
- Timely
- Drives “appropriate action”
- Meets organizational goals & objectives

Meaningful to the Customer

DoD Aviation "Class A" Accident Rate



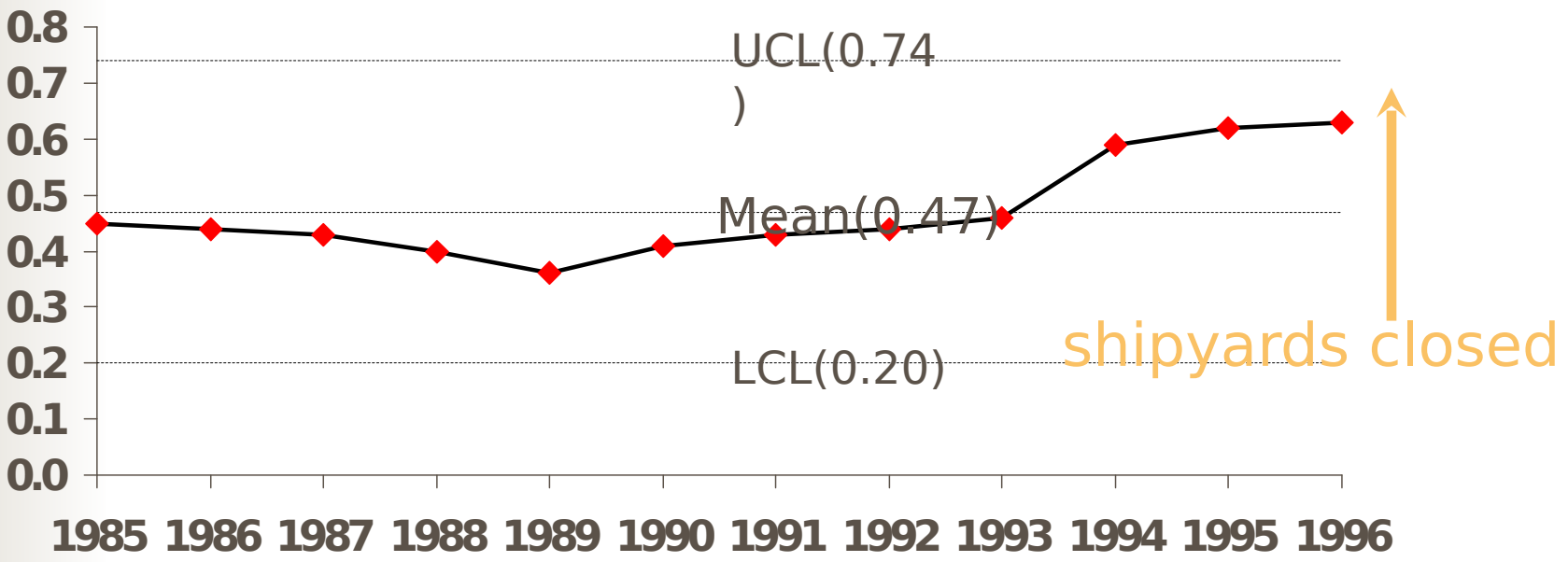
Shows a Trend



Timely (not!)

Workers' Compensation Hearing Loss Claims

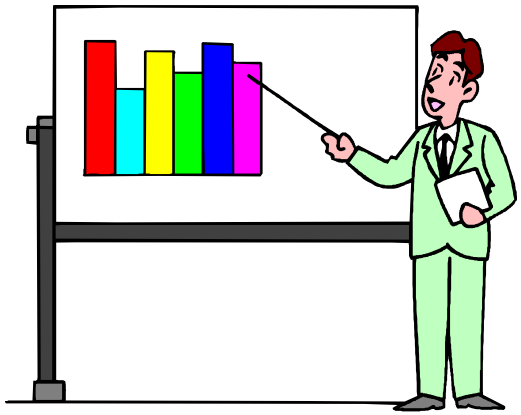
 # claims/100 Employees



Feedback Loop

data entry

data-based decisions



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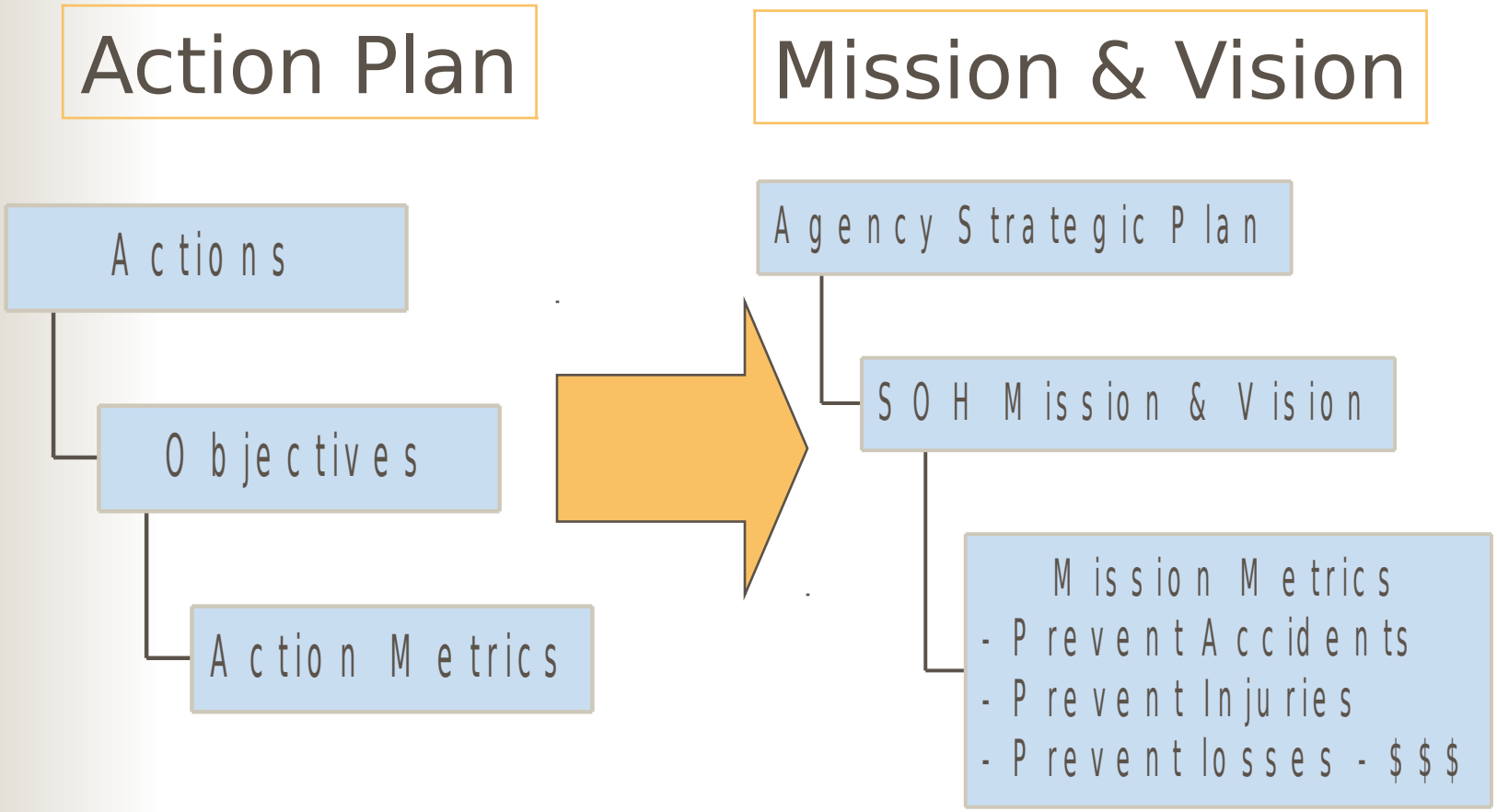
Overview of a SOH Action Plan

- It contains a Strategy
  - Mission
  - “Mission metrics” to measure mission success
    - Accidents, fatalities, injuries, $$$
  - Vision
  - Commitment

Overview of an Action Plan (cont'd)

- It contains Actions
  - Five Action areas modeled from VPP
  - Each Action has specific objectives that include
    - Classical safety program elements
    - Best practices of the best private industry programs
  - Metrics to measure achievement of each objective
    - % employees trained
    - % accidents investigated
    - % workplaces inspected

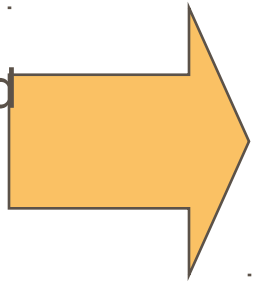
Actions Support the Mission



Action Plan Metrics Support Mission Metrics

Action Plan Metrics

- % employees trained
- % accidents investigated
- % workplaces inspected
- # near-misses reported
- # behavior observations



Mission Metrics

- Accident rate
- Lost workday Injury rate
- Total case rate

Why emphasize performance measures?

- Clarify the target
- Use objectives & metrics to build:
  - work plans
  - budget
- Audit/assess progress

How were the Action Plan metrics selected?

- Included all possible metrics
  - Classical safety programs
  - Superior corporations and government agencies with significant reductions in injuries and illnesses
  - Metrics ‘cafeteria’ from which you can select
- Removed some metrics as unworkable
  - Professional experience
  - Professional judgment

Select Metrics That Fit the Culture

Local Culture Example	Example Metrics
Dynamic local command	Leadership Commitment
Employees empowered to make changes	Employee Involvement
No local strengths or weaknesses	'Gut feeling' as most likely to make a difference

Metrics Are Usable

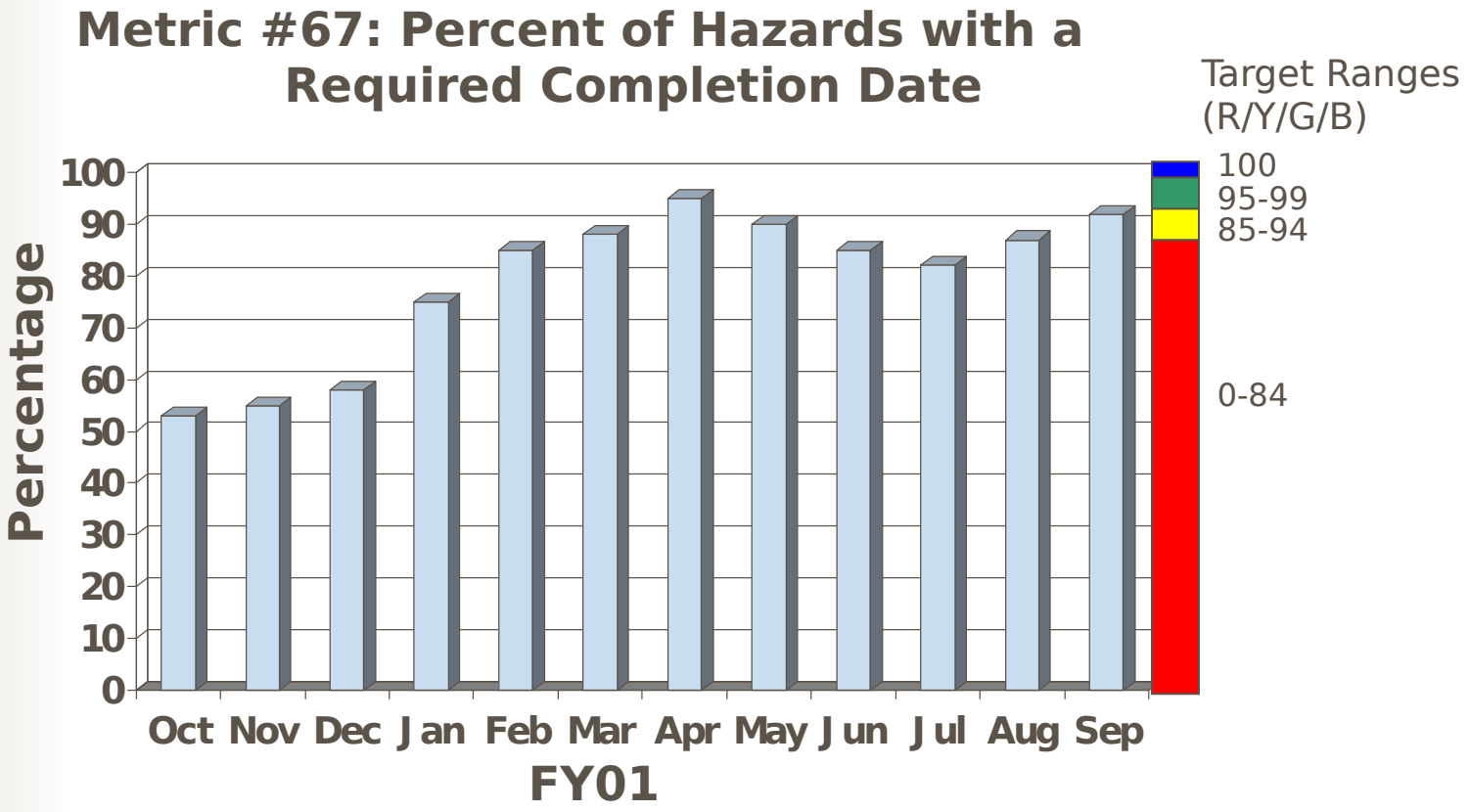
- Metrics
  - Meet local organizational goals & objectives
  - Drive “appropriate action”
    - Law of Unintended Consequences
- They are
  - Linked to the process
  - Simple, understandable, repeatable
  - Clearly defined
  - Economical to collect
  - Timely &
  - Show a trend

How it will work – The Action Plan Process

1. Each FA selects field activity-specific objectives and metrics
2. Agency HQ Safety reviews selected metrics & measurement procedures with FA
3. Each FA implements the action plan and monitors their metrics, adjusts program execution, and reports throughout the year
4. Agency HQ Safety reviews performance annually with FAs
5. Agency HQ Safety reviews agency performance and briefs DASHO and Agency Leader
6. FAs select objectives & metrics for new FY

How It Will Work – The Numbers

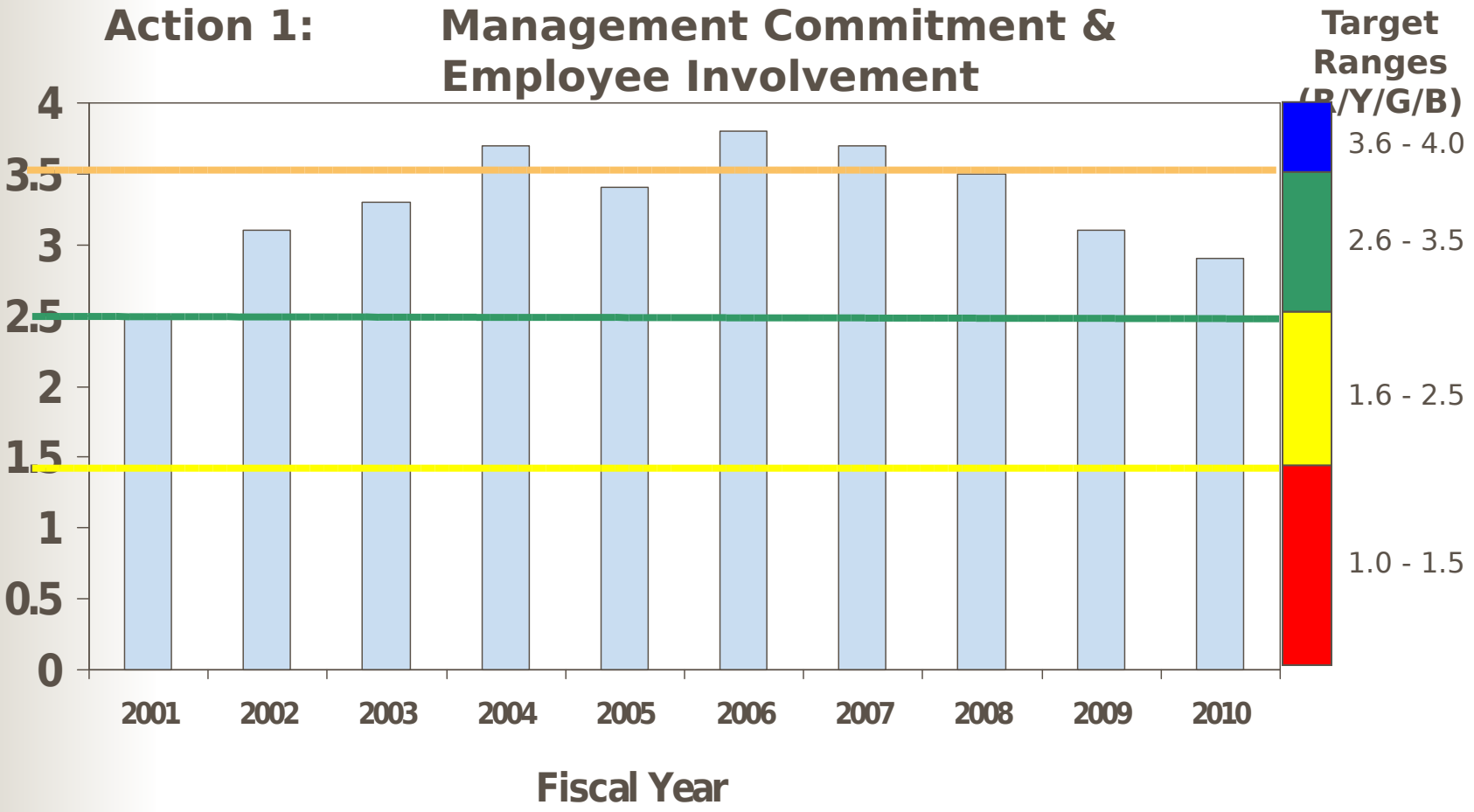
Safety Metric Quality Control Report



	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Numerator	8	12	3	6	13	18	24	28	38	34	32	23
Denominator	15	20	5	7	15	20	25	30	42	37	36	25
Rate	53	55	58	75	85	88	95	90	85	82	87	92

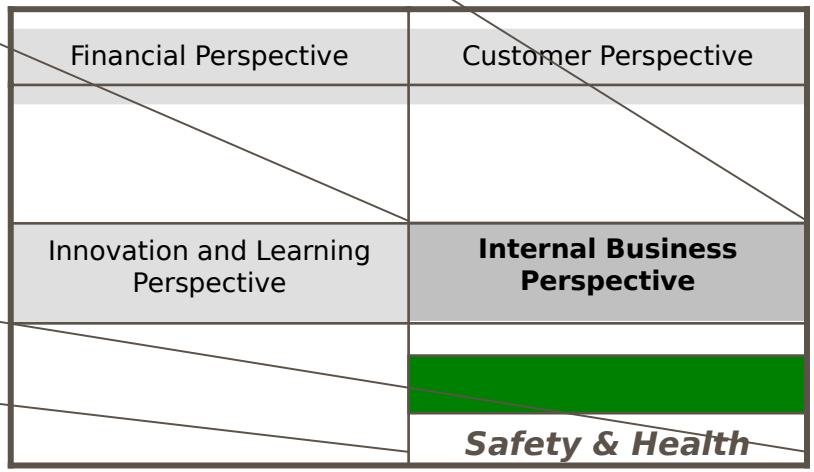
Select a numerator or denominator value to modify

Performance By Action Report



How SOH Action Plan will fit into the Agency Strategic Plan

Mgt. Commitment & Employee Involvement
Activity and Worksite Analysis
Safety & Health Training
Hazard Prevention & Control
Agency HQ S&H



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Background

- The ESOH office is tasked to develop performance measures that:
  - Can be readily explained to the Agency leadership and members of Congress, and
  - Can clearly show how appropriated funds would improve the environmental performance of a particular building, a region's building portfolio, and/or the entire Agency building portfolio.

Purpose of the Measure

- ERI Results will be used to:
  - Measure progress towards meeting the Agency environmental goal and objective
    - *Goal:* Carry out social, environmental, and other responsibilities as a federal agency.
    - *Objective:* Provide safe and environmentally responsible workplaces
  - Assist in identifying greatest environmental risks
  - Support program and budgeting decisions at the facility, regional and headquarters level.

Define & Prioritize Environmental Risks

1. Hazardous waste
2. Asbestos
3. IAQ
4. Hazardous materials
5. Subsurface contamination
6. Lead
7. PCB
8. Storage tanks
9. Air emissions
10. Drinking water (Agency or Utility)
11. Wastewater
12. Radon
13. Stormwater

Define & Prioritize Impact Scenarios

- Impact scenarios
  1. Human harm
  2. Environmental damage
  3. Property damage
  4. Financial harm
  5. Legal liability
  6. Public relations damage

Sample Score Sheet-Wastewater

Criteria	5	4	3	2	1
Discharges from WWTP meet permit requirements.	**N**			Y	
The facility's WWTP is at or near recommended carrying capacity.	Y			**N**	
Major upgrades or replacements are required at the facility's WWTP.		**Y**		N	
WW management or operator staff receives required training or certification.	N			**Y**	
Discharges to POTW and FOTW meet all pretreatment requirements.		**N**			Y

Scoring formula: ERI = (Sum / max. possible points) * weighting factor [unique for each risk category]

E.g.: (17 / 23) * 3.32 = 2.45 ERI

Obtaining a Building ERI Score

- ERI Score
  - Example:
    - Wastewater field score = 17 out of 23
    - Wastewater Expert Choice weight = 3.32
    - Wastewater ERI = 2.45
- Each of the 13 category scores is entered and summed to provide a Building ERI Score

Environmental Risk Index for Each Facility

- Compute an ERI
  - Index based on percent scale – 0 to 100
    - Zero represents a building with no risk
    - An index of 100 will be assigned to buildings with the highest risk for every risk

Develop Resource Allocation Portfolios

- Portfolio parameter examples
  - Strategic Plan Goal
    - Cost to reduce the ERI by ___ percent
  - Highest – Lowest Risk
    - Abate/remediate based upon available resources
  - Number of projects
    - Number of large projects
    - Number of projects per region
    - Number of total projects funded
  - Risk category (i.e., asbestos, IAQ, hazardous waste)
  - Cost per sq. ft.

Portfolio Summary

Portfolio #	Budget	Constraint	# of projects selected	New ERI Average	Total Cost
1	$ 1,000,000	>=1 project per building	13	15%	$ 975,000
2	$ 1,500,000	>=1 project per building	15	9%	$ 1,500,000
3	$ 500,000	>=1 project per building	10	23%	$ 475,000
4	$ 500,000	>=1 building with asbestos	10*	23%	$ 462,000
5	$ 1,000,000	>=1 project per building and 4 buildings with asbestos	12	18%	$ 975,000

*Note: Total number of projects selected is 10 like portfolio #3, but different projects were chosen

Resource Allocation Portfolio Benefits

- Employees at several levels of the organization become involved and provide input
- The process is credible because it is aligned with Agency strategies & goals
- The process provides a performance metric that can be measured
- The process is repeatable. The priorities may change, but the process remains the same.

Review

- Do you need metrics?
- Link metrics to your organizational plans
- Which metrics development method works best for you?
- Test your metrics
- Monitor & adjust metrics and then performance targets accordingly

Questions?